

MULTIPLE-PLANE FINFET CMOS

ABSTRACT OF THE DISCLOSURE

The present invention provides FinFETs on the same substrate utilizing various crystal planes for FET current channels in order to optimize mobility and/or to reduce mobility. An embodiment of the present invention provides a substrate having a surface oriented on a first crystal plane that enables subsequent crystal planes for channels to be utilized. A first transistor is also provided having a first fin body. The first fin body has a sidewall forming a first channel, the sidewall oriented on a second crystal plane to provide a first carrier mobility. A second transistor is also provided having a second fin body. The second fin body has a sidewall forming a second channel, the sidewall oriented on a third crystal plane to provide a second carrier mobility that is different from the first carrier mobility.